

WHAT IS CLAIMED IS:

1. A private communications network comprising:

an end system configured to communicate with a remote system via a network separate from the private communications network;

a network application server to receive a call request from the end system and using an address mapping table configured to communicate with the network application server to generate at least one address mapping responsive thereto; and

a packet modifier configured to use the at least one address mapping to map communication packets from the end system for transmission on the separate network.
2. The network of claim 1, wherein:

the end system is configured to communicate with the remote system by sending communication packets to the packet modifier; and

the packet modifier is configured to map communication packets from the end system by substituting at least one of source and destination addresses in the packet according to the mapping from the network application server.
3. The network of claim 2, wherein the packet modifier is configured to substitute at least a source address in the packet.

4. The network of claim 1, wherein the network application server is configured to provide the at least one address mapping to the packet modifier via a command according to a predetermined protocol.

5. An address mapping system for providing address mappings to a packet modifier, the system comprising:

an address mapping table configured to store information on address mappings of at least one of an end system communicable with the address mapping system over a private network, and a remote system communicable with the end system over a separate network; and

a network application server, configured to communicate with the address mapping table, to access the address mapping table to obtain the address mapping information and to use the address mapping information to generate a mapping association used by a packet modifier to modify packets from at least one of the end system and the remote system.

6. The system of claim 5, wherein the address mapping table is configured to store information on an address mapping of at least the end system.

7. The system of claim 5, wherein the network application server is configured to access the address mapping table responsive to a request by the end system to communicate with the remote system.

8. The system of claim 5, wherein the network application server is configured to access the address mapping table responsive to a request by the remote system to communicate with the end system.

9. The system of claim 5, wherein the network application server is configured to send a command to the packet modifier to push the mapping association to the packet modifier.

10. A method of mapping packets in a communication network, the method comprising:

requesting establishment of a communication session between an end system connected to the network and a remote system connected to a separate network;

using a network application server to access an address mapping table connected to the network application server and obtain address mapping data stored in the address mapping table;

determining an address mapping of at least one of the end system communicable and the remote system based on the address mapping data; and

modifying packets sent from one of the end system and the remote system to the other according to the address mapping.

11. The method of claim 10, wherein modifying packets includes modifying packets by substituting addresses of the packets corresponding to the end system.

12. The method of claim 10, wherein:
the network application sever determines the address mapping; and
a packet modifier separate from the network application server modifies
the packets.

13. The method of claim 12, further comprising using the network
application server to communicate the address mapping to the packet modifier via a
command protocol.

14. A method of generating address mappings using a network application
server, the method comprising:

receiving a request to establish a communication session between an end
system connected to the network and a remote system connected to a public network;

accessing an address mapping table connected to the network application
server to obtain address mapping information relating to at least one of the end system
and the remote system;

generating an address mapping association based on the address mapping
information; and

pushing the mapping association to a packet modifier for modifying
packets sent from one of the end system and the remote system to the other.

15. The method of claim 14, wherein the address mapping association relates to at least the end system.

16. The method of claim 14, wherein pushing the mapping association is done using a command language.

17. A private communications network comprising:
an end system configured to communicate with a remote system via a network separate from the private communications network;
a network application server to receive a call request indicating the remote system wishes to communicate with the end system and using an address mapping table configured to communicate with the network application server to generate at least one address mapping responsive thereto; and
a packet modifier configured to receive a call request from the remote system via the separate network, to receive the address mapping from the network application server and to use the at least one address mapping to map communication packets from the end system for transmission on the private network.

18. The network of claim 17, wherein the packet modifier is configured to receive communication packets via the separate network from the remote system, process them using the address mapping from the network application server and pass the processed packets to the end system.

19. The network of claim 18, wherein the packet modifier is configured to process the communication packets by performing a destination address substitution according to the address mapping from the network application server.

20. The network of claim 17, wherein the network application server is configured to provide the at least one address mapping to the packet modifier via a command according to a predetermined protocol.

21. The network of claim 20, wherein the protocol is COPS-PR.

22. The network of claim 17, wherein the network application server is further to send a message to the remote system providing an address on the separate network which will be mapped by the packet modifier.